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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/784,966 | 02/25/2004 | Takafumi Noguchi | Q80094 | 8468 |
| 23373 | 7590 | 03/01/2006 | EXAMINER | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | GUHARAY, KARABI | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2879 | |

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/784,966 | Applicant(s) NOGUCHI, TAKAFUMI | |
| | Examiner Karabi Guharay | Art Unit 2879 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Remarks, filed on 12/20/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Amendment and Remarks, filed on 12/20/2005 has been considered and entered.

Amendment of title is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Hsu (US 6756474).

Regarding claims 1, 4, 6 & 9-10, Hsu discloses an organic light emitting diode (Fig 1), comprising a substrate (lines 42-44 of column 7), a transparent electrode (anode 110), at least two organic layers including a light emitting layer (130) and electron transporting layer (140) and a back electrode (cathode 150, lines 4-12 of column 5), wherein a thickness of the electron transporting layer is 60nm or greater (thickness lies between 20nm-80nm), and a total thickness of the electron transporting layer and the light emitting layer is 90nm or smaller (total thickness lies between 30nm-160nm, lines 50-54 of column 7).

Regarding claims 2-3, Hsu discloses that the thickness of the transparent electrode lines in the range from 50nm-500nm (line 49 of column 7).

Regarding claim 5, Hsu discloses that the total thickness of the at least two organic layers is 90 nm-300 nm ((total thickness lies between 30nm-160nm, lines 50-54 of column 7).

Regarding claims 7-8, Hsu discloses that the total thickness of the transparent electrode and the at least two organic layers is between 250 nm-400 nm and 250 nm-350nm (total thickness lies between 80nm- 660nm, see lines 49-54 of column 7).

Regarding claim 11, Hsu discloses that the thickness of the light-emitting layer is 10 to 20 nm (line 51 of column 7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu as applied to claim 1 above, and further in view of Fukuda (US 6541130).

Regarding claims 12-13, Hsu discloses all the limitations of claims 12-13 except for at least two light emitting layers different in luminescence waveform in a side-by-side configuration since Hsu discloses a single color OLED.

However, Fukuda teaches that in order to produce a multicolor display using organic electroluminescence, at least two light emitting layers (43B, 43G, 43R of Fig 2) are arranged side-by-side configuration emitting light of different wave length (see Fig 2).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use at least two different light emitting layer arranged side-by-side, as taught by Fukuda, in the device of Hsu, in order to have a multicolor display.

Response to Arguments

Applicant's arguments filed 12/20/200 have been fully considered but they are not persuasive.

In response to applicant's argument that Hsu discloses electron transporting layer having thickness lies in the range 20nm through 80nm, which is the preferred range of broader range of 1-100nm, while claimed range is 60nm or less which is basically from 1-60 nm. In this case, the prior art range overlaps the claimed range, thus anticipates the claimed range since prior art discloses the range 20nm-60nm with sufficient specificity, since Hsu specifically disclose the preferred narrow range of 20-80nm from the range of 1-100 nm. See MPEP 2131.03.

Hsu discloses specifically that the preferred total thickness of electron transporting layer and the light emitting layer in the range of 30nm-160nm, among the broader possible range of 5-200nm.

Similarly this preferred total thickness range of prior art overlaps the claimed total thickness range of 1-90 nm. See MPEP 2131.03.

In response to applicant's argument that examiner has completely ignored the PANI layer and its thickness, it is the position of examiner not to consider the Pani layer, since claim only calls for total thickness of electron transport layer and the light emitting layer.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

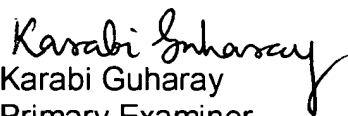
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (571) 272-2452. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Karabi Guharay
Primary Examiner
Art Unit 2879